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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,827	03/03/2004	Osamu Takagi	118160	1549

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EXAMINER	
DAVIS, MARY ALICE	
ART UNIT	PAPER NUMBER
3748	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/790,827	TAKAGI ET AL.	
	Examiner	Art Unit	
	MARY A. DAVIS	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) *3,4,11-13,22 and 23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5-10 and 14-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 March 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/3/04; 3/24/04; 7/21/04; 7/17/06; 1/23/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 3-4, 11-13, and 22-23 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 21 December 2007.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first position of the inner wall surface must be shown or the feature(s) canceled from the claim(s). Please label the first position of the inner wall surface on the drawings and add this to label to the specification. No new matter should be entered.

3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2 and 5-9 are rejected under 35 U.S.C. 102(b) as being anticipated by any one of the following NAKAMURA (European Patent Application EP-0933532-A2), OSTBERG (World Intellectual Property Application Number WO 98/42984), and ADORJÁN (World Intellectual Property Application Number WO 98/03794).

Regarding claim 1, NAKAMURA, OSTBERG, and ADORJÁN disclose:

- A pump, comprising:
- a case ((1) of NAKAMURA; (2) of OSTBERG; (10) of ADORJÁN) having a hollow inside (see Figures 2-4 of NAKAMURA; see Figures 2, 4, 6, and 8-9 of OSTBERG; see Figures 1 and 4 of ADORJÁN) defined by an inner wall surface (see Figures 2-4 of NAKAMURA; (10, 11) of OSTBERG; (13, 16) of ADORJÁN) thereof and including a first through hole ((K) of NAKAMURA; (4) of OSTBERG; (14) of ADORJÁN) through which fluid is sucked in the hollow (see Figure 2 of

NAKAMURA; see Figures 2, 4, 6, and 8-9 of OSTBERG; see Figures 1 and 4 of ADORJÁN) and a second through hole ((D) of NAKAMURA; (5) of OSTBERG; (15, 17) of ADORJÁN) through which the fluid is ejected from the hollow (see Figure 2 of NAKAMURA; see Figures 2, 4, 6, and 8-9 of OSTBERG; see Figures 1 and 4 of ADORJÁN);

- a rotor ((4) of NAKAMURA; (3) of OSTBERG; (20) of ADORJÁN) that is rotatable in the hollow and having a rotary shaft ((10) of NAKAMURA; (18) of OSTBERG; (20) of ADORJÁN) and a through groove ((4B) of NAKAMURA; see Figures 2, 4, 6, and 8-9 of OSTBERG which shows a through groove in which the partition (12) slides in; (22) of ADORJÁN) formed on the rotor in a direction across the rotary shaft (see Figures 2-4 of NAKAMURA; see Figures 2, 4, 6, and 8-9 of OSTBERG; see Figures 1 and 4 of ADORJÁN); and
- a partition ((7) of NAKAMURA; (12) of OSTBERG; (21, 30) of ADORJÁN) supported in the through groove slidably in the direction across the rotary shaft (see Figures 2-4 of NAKAMURA; see Figures 2, 4, 6, and 8-9 of OSTBERG; see Figures 1 and 4 of ADORJÁN), the partition being rotatable with the rotor with at least both ends of the partition, with respect to the direction across the rotary shall, in constant contact with the inner wall surface defining the hollow upon rotation of the rotor, wherein the hollow is partitioned into a plurality of chambers each enclosed by the case, the rotor, and the partition member (see Figures 3a-3D of NAKAMURA and Column 7, ¶0028 – Column 8, ¶0033; see Figures 2, 4,

6, and 8-9 of OSTBERG and Page 8, line 10 – Page 10, line 8; see Figures 1 and 4 of ADORJÁN and Page 7, line 20 – Page 9, line 24).

Regarding claim 2, NAKAMURA, OSTBERG, and ADORJÁN disclose:

- the rotor is rotatable and in constant or intermittent contact with a first position of the inner wall surface defining the hollow (see Figures 3A-3D of NAKAMURA and Column 7, ¶0028 – Column 8, ¶0033; see Figures 2, 4, 6, and 8-9 of OSTBERG and Page 8, line 10 – Page 10, line 8; see Figures 1 and 4 of ADORJÁN and Page 7, line 20 – Page 9, line 24), and when the rotor is at least in contact with the first position of the inner wall surface, the first through hole and the second through hole are present in different chambers (see Figures 3A-3D of NAKAMURA and Column 7, ¶0028 – Column 8, ¶0033; see Figures 2, 4, 6, and 8-9 of OSTBERG and Page 8, line 10 – Page 10, line 8; see Figures 1 and 4 of ADORJÁN and Page 7, line 20 – Page 9, line 24).

Regarding claim 5, NAKAMURA, OSTBERG, and ADORJÁN disclose:

- when the first through hole and the second through hole are on a same side with respect to the partition, a fluid resistance between the first through hole and the second through hole is variable (see Figures 3A-3D of NAKAMURA and Column 7, ¶0028 – Column 8, ¶0033; see Figures 2, 4, 6, and 8-9 of OSTBERG and Page 8, line 10 – Page 10, line 8 (it is inherent that the first through hole (inlet) and the second through hole (outlet) have different fluid resistances because the fluid has been compressed and forced to move from the first position to the

second position due to the rotational movement of the rotor and partition); see Figures 1 and 4 of ADORJÁN and Page 7, line 20 – Page 9, line 24).

Regarding claim 6, NAKAMURA, OSTBERG, and ADORJÁN disclose:

- the fluid resistance is changed when the rotor is moved between a position making contact with a first position of the inner wall surface defining the hollow and a position where the rotor does not make contact with the first position (see Figures 3A-3D of NAKAMURA and Column 7, ¶0028 – Column 8, ¶0033; see Figures 2, 4, 6, and 8-9 of OSTBERG and Page 8, line 10 – Page 10, line 8 (it is inherent that the first through hole (inlet) and the second through hole (outlet) have different fluid resistances because the fluid has been compressed and forced to move from the first position to the second position due to the rotational movement of the rotor and partition); see Figures 1 and 4 of ADORJÁN and Page 7, line 20 – Page 9, line 24).

Regarding claim 7, NAKAMURA, OSTBERG, and ADORJÁN disclose:

- the fluid resistance is changed when a part of the inner wall surface defining the hollow is moved between a position making contact with a first position of the inner wall surface defining the hollow and a position that does not make contact with the first position (see Figures 3A-3D of NAKAMURA and Column 7, ¶0028 – Column 8, ¶0033; see Figures 2, 4, 6, and 8-9 of OSTBERG and Page 8, line 10 – Page 10, line 8 (it is inherent that the first through hole (inlet) and the second through hole (outlet) have different fluid resistances because the fluid has been compressed and forced to move from the first position to the second

position due to the rotational movement of the rotor and partition); see Figures 1 and 4 of ADORJÁN and Page 7, line 20 – Page 9, line 24).

Regarding claim 8, NAKAMURA, OSTBERG, and ADORJÁN disclose:

- the rotor has a cut portion on an outer peripheral surface around the rotor ((5) and around the groove of NAKAMURA; see Figures 2, 4, 6, and 8-9 of OSTBERG where the cut portion on the outer peripheral surface of the rotor is at the groove; see Figures 1 and 4 of ADORJÁN which shows the rotor has cut portions on the outer peripheral where the groove is located for the partition) and the rotor rotates in constant or intermittent contact with a first position of the inner wall surface defining the hollow (see Figures 3A-3D of NAKAMURA and Column 7, ¶0028 – Column 8, ¶0033; see Figures 2, 4, 6, and 8-9 of OSTBERG and Page 8, line 10 – Page 10, line 8; see Figures 1 and 4 of ADORJÁN and Page 7, line 20 – Page 9, line 24), and the fluid resistance is changed in accordance with a position of the cut portion changing by rotating of the rotor with respect to the first through hole and the second through hole (see Figures 3A-3D of NAKAMURA and Column 7, ¶0028 – Column 8, ¶0033; see Figures 2, 4, 6, and 8-9 of OSTBERG and Page 8, line 10 – Page 10, line 8 (it is inherent that the first through hole (inlet) and the second through hole (outlet) have different fluid resistances because the fluid has been compressed and forced to move from the first position to the second position due to the rotational movement of the rotor and partition), furthermore, the fluid resistance is changed

depending on the relative location of the partition; see Figures 1 and 4 of ADORJÁN and Page 7, line 20 – Page 9, line 24).

Regarding claim 9, NAKAMURA, OSTBERG, and ADORJÁN disclose:

- the rotor has a communication passage ((5) and the groove of NAKAMURA; see Figures 2, 4, 6, and 8-9 of OSTBERG where the communication passage is at the groove; see Figures 1 and 4 of ADORJÁN which shows the rotor has communication passage where the groove is located for the partition) connecting two places on the outer peripheral surface (see Figures 2-4 of NAKAMURA; see Figures 2, 4, 6, and 8-9 of OSTBERG; see Figures 1 and 4 of ADORJÁN) and the rotor rotates in constant or intermittent contact with a first position of the inner wall surface defining the hollow (see Figures 3A-3D of NAKAMURA and Column 7, ¶0028 – Column 8, ¶0033; see Figures 2, 4, 6, and 8-9 of OSTBERG and Page 8, line 10 – Page 10, line 8; see Figures 1 and 4 of ADORJÁN and Page 7, line 20 – Page 9, line 24), and the fluid resistance is changed in accordance with a position of the communication passage changing by rotating the rotor with respect to the first through hole and the second through hole (see Figures 3A-3D of NAKAMURA and Column 7, ¶0028 – Column 8, ¶0033; see Figures 2, 4, 6, and 8-9 of OSTBERG and Page 8, line 10 – Page 10, line 8 (it is inherent that the first through hole (inlet) and the second through hole (outlet) have different fluid resistances because the fluid has been compressed and forced to move from the first position to the second position due to the rotational movement of the rotor and partition), furthermore, the fluid resistance is changed

depending on the location of the partition ; see Figures 1 and 4 of ADORJÁN and Page 7, line 20 – Page 9, line 24).

6. Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by either one of NAKAMURA or OSTBERG.

Regarding claim 15, NAKAMURA and OSTBERG disclose:

- when the rotor is stopped at a rotational position when the pump is not in operation, the rotor has a passage ((5) and the partition groove in the rotor of NAKAMURA; the passage is the groove which holds the partition of OSTBERG) that provides communication between the first through hole and the second through hole (see Figures 3B and 3C of NAKAMURA; see Figures 2, 4, 6, and 8-9 of OSTBERG, it is inherent that the passage in which the partition slides would communicate the first and second through hole).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claim 10 is also rejected under 35 U.S.C. 103(a) as being unpatentable over any one of the following: NAKAMURA, OSTBERG, or ADORJÁN.

NAKAMURA, OSTBERG, and ADORJÁN disclose the claimed invention, as discussed above, however, fail to disclose the second through hole is formed on the upper vertical side of the case.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the second through hole on the upper vertical side of the case in any of the pumps of NAKAMURA, OSTBERG, or ADORJÁN, in order to allow any gas bubbles to escape from the pump. Furthermore, it has been held that rearranging parts of an invention involves only routine skill in the art.

9. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over any one of the following: NAKAMURA, OSTBERG, or ADORJÁN in view of TAKEHIKO (Japanese Patent Publication JP 7-80304 B2).

NAKAMURA, OSTBERG, and ADORJÁN disclose the claimed invention above. In the event that NAKAMURA and OSTBERG fail to disclose the claimed limitations of claim 15, a further rejection is presented below for NAKAMURA and OSTBERG.

NAKAMURA, OSTBERG, and ADORJÁN also fail to disclose a metal needle having a fluid passage inside connected to the first through hole.

Regarding claim 14, TAKEHIKO teaches:

- a metal needle (16) having a fluid passage inside (see Figure 1) is directly connected to the first through hole (see Figure 1).

Regarding claim 15, TAKEHIKO teaches:

- when the rotor stops at a rotational position when the pump is not in operation, the rotor has a passage that provides communication between the first through hole and the second through hole (see ABSTRACT).

It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to have when the rotor stops at a rotational position when the

pump is not in operation, the rotor has a passage that provides communication between the first through hole and the second through hole in any one of the pumps of NAKAMURA, OSTBERG, or ADORJÁN, in order to provide communication in an ink jet printer which operates by negative pressure, and thus, requires an open passage between the first and second through hole. Ink jet printers utilize the pump only to provide ink when the ink level is at a specific location or to purge the system, and thus, it would be obvious to stop the rotor at a position which provides communication between the first and second through holes, so that the pump does not have to rotate in order to print when the ink levels are above a specific location (see ABSTRACT and patent publication of TAKEHIKO).

10. Claims 16-18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over any one of the following: NAKAMURA, OSTBERG, or ADORJÁN in view of TAKEHIKO.

Regarding claim 16, NAKAMURA, OSTBERG, and ADORJÁN discloses the pump as discussed above in claim 1.

Regarding claim 17, NAKAMURA, OSTBERG, and ADORJÁN disclose:

- when the first through hole and the second through hole of the pump are on the same side with respect to the partition, a fluid resistance between the first through hole and the second through hole is variable in a first chamber where the first through hole and the second through hole are present out of two chambers that are formed in the hollow partitioned by the partition (see Figures 3A-3D of NAKAMURA and Column 7, ¶0028 – Column 8, ¶0033; see Figures 2,

4, 6, and 8-9 of OSTBERG and Page 8, line 10 – Page 10, line 8 (it is inherent that the first through hole (inlet) and the second through hole (outlet) have different fluid resistances because the fluid has been compressed and forced to move from the first position to the second position due to the rotational movement of the rotor and partition); see Figures 1 and 4 of ADORJÁN and Page 7, line 20 – Page 9, line 24).

However, NAKAMURA, OSTBERG, and ADORJÁN fails to disclose the pump used in an ink jet printer.

Regarding claim 16, TAKEHIKO teaches:

- An inkjet printer comprising:
- an inkjet head (1) that ejects ink toward a recording medium (see Figures 1 and 4, and see ABSTRACT and Page 2);
- an ink tank (18, 13) that contains ink (2) for supplying the inkjet head (see Figure 1).

Regarding claim 18, TAKEHIKO teaches:

- a metal needle (16) having a fluid passage inside (see Figure 1) is directly connected to the first through hole (see Figure 1) and a tip of the needle is stuck in the ink tank (see Figure 1).

Regarding claim 21, TAKEHIKO teaches:

- when the rotor is stopped at a rotational position when the pump is not in operation, the rotor has a passage that provides communication between the first through hole and the second through hole with the rotor stopped at the

rotational position (see ABSTRACT), and when ink is ejected from the inkjet head with the rotor stopped at the rotational position, ink is supplied from the ink tank via the passage to the inkjet head (see ABSTRACT and Figure 1).

Furthermore, TAKEHIKO teaches that a pump is used in an ink jet printer in order to provide ink when the ink is below a specific level. During normal operations, TAKEHIKO teaches that the pump does not rotate and the rotor stops at a rotational position where there is communication between the first through hole and the second through hole in order to provide ink to the head, since an ink jet printer supplies ink to the head normally by negative pressure (see ABSTRACT and patent publication of TAKEHIKO).

It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to have used the pump of NAKAMURA, OSTBERG, and ADORJÁN in an ink jet printer, since it requires only routine skill in the art to change the type of pump used in an apparatus. Furthermore, it would be obvious to stop the rotor at a position which provides communication between the first and second through holes in any of the pumps of NAKAMURA, OSTBERG, and ADORJÁN, so that the negative pressure is used to supply the ink to the ink head in an ink jet printer, and thus, no energy is used for the pumping operation (see ABSTRACT and patent publication of TAKEHIKO).

11. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over any one of the following modified pumps for use in an ink jet printer: NAKAMURA, OSTBERG, or ADORJÁN as applied to claim 16 above, and further in view of

either one of HINO (U.S. Patent 6,561,637 B2) or MARUYAMA (U.S. Patent 4,380,770).

The modified ink jet printer system of NAKAMURA, OSTBERG, and ADORJÁN discloses the claimed invention, including an ink passage connecting the pump and the inkjet head is formed with a portion that is connected to the second through hole (see TAKEHIKO Figure 1). However, the modified ink jet printer system of NAKAMURA, OSTBERG, and ADORJÁN fails to disclose the second through hole faces vertically and a filter is placed horizontally. HINO and MARUYAMA teach filters in an ink jet printer (see (17f, 26) of HINO and Figures 5A and 6; see Figure 6 of MARUYAMA and Column 5, line 67—Column 6, line 14).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the second through hole on the upper vertical side of the case in any of the modified ink jet printer systems of NAKAMURA, OSTBERG, or ADORJÁN, in order to allow any gas bubbles to escape from the pump. In addition, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have a filter disposed in the portion between the second through hole and the inkjet head and placed in a horizontal position in the modified ink jet printer systems of NAKAMURA, OSTBERG, or ADORJÁN, in order to filter out any foreign particles prior to the ink reaching the inkjet head, and thus, reducing clogs in the inkjet head. It has been held that rearranging parts of an invention involves only routine skill in the art, and therefore, orientation of the second through hole in the vertical position and the filter

to be in the horizontal position, or in any desired orientation, would require only routine skill in the art.

12. Claim 20 is rejected under 35 U.S.C. 103(a) as being obvious over any one of the following modified pumps for use in an ink jet printer: NAKAMURA, OSTBERG, or ADORJÁN as applied to claim 16 above.

NAKAMURA, OSTBERG, and ADORJÁN disclose the claimed invention, as discussed above, however, fail to disclose the second through hole is formed on the upper vertical side of the case.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the second through hole on the upper vertical side of the case in any of the modified ink jet printer systems of NAKAMURA, OSTBERG, or ADORJÁN, in order to allow any gas bubbles to escape from the pump. Furthermore, it has been held that rearranging parts of an invention involves only routine skill in the art.

Prior Art

13. The IDS (PTO-1449) filled on 3/3/04, 3/24/04, 7/21/04, 7/17/06, and 1/23/07 have been considered. An initialized copy is attached hereto.

Communication

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARY A. DAVIS whose telephone number is (571)272-

9965. The examiner can normally be reached on Monday thru Thursday; 6:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mary A Davis/
Examiner, Art Unit 3748

/Thomas E. Denion/
Supervisory Patent Examiner, Art Unit 3748